

machinery. Unlike most museum objects, much of this equipment is maintained in working order to enhance interpretation. A conflict can arise, however, between historians and conservators, on the one hand, and mechanics and restorers on the other. One side views objects as technological documents, while the other sees them as of little use unless they are working and moving.

In my talk, I discussed the issue of documentation as an area of conflict between restorers and conservators. Conservators want to document everything they can, and if possible leave everything "original" alone; restorers are anxious to get the machine working—even if parts need to be modified—and get documentation after the fact. I suggested that the two could move to the center if restorers would learn to document more, and if conservators would occasionally relax enough to

allow changes to original surfaces and parts—if the changes were thoroughly documented.

The conference papers will be available as a publication of the United Kingdom Institute of Conservation (6 Whitehorse Mews, Westminster Bridge Road, London SE1 7QD). Another useful recent publication is *Larger & Working Objects, A Guide for Their Preservation and Care*, a publication of the Museums and Galleries Commission (MGC Publications, 16 Queen Annes Gate, London SW1H 9AA, price 11.25 pounds, and postage).

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Preserving the History of Mining Technology in the NPS

The National Park Service preserves many sites and artifacts associated with the history of mining. These cultural resources reveal how mining shaped American development. The metals and minerals extracted from mines effect many aspects of our lives, whether we use them in the home (glass, nails, pipes), in industry (tools, machines), in communications (televisions, radio, telephones), or in transportation (automobiles, airplanes).

There are many ways to tell the mining story. To simplify interpretation, we can view mining technology in three parts or phases: extraction (or removal of material from the ground), processing (milling, refining), and transportation. NPS units contain evidence of changing technologies in all three phases.

Alibates Flint Quarry National Memorial in the Texas Panhandle is an excellent representation of mining techniques practiced by native Americans before European arrival. Southwestern parks, where early Spanish settlers extracted gold and silver, have the remains of mine openings and arastas for grinding. NPS units also contain many western mines from the late-19th and early-20th centuries, a period of rapid technological change. The copper mines of the Kennicott Mining Company in Wrangell-St. Elias National Park and Preserve, Alaska, and Calumet in the Upper Michigan Peninsula have wonderfully preserved machinery and structures from this period. Glacier National Park has a massive cast iron jaw-crusher and steam engine at the Cracker Mine.

The coal mines and structures (e.g., buildings, electric train cars, coke ovens, conveyor systems, etc.) in New River Gorge National River, West Virginia, and Big South Fork National River, Tennessee, are reminders of the dominance of coal in the American economy. Many diggings and structures dotting Colorado plateau parks and the six-story steel headframe on the rim of the Grand Canyon are silent testimony to the role of uranium mining during the Cold War.

The saltpeter (nitrate) works at Mammoth Cave in Kentucky supplied the chief ingredient of gunpowder until the War of 1812. Gold was mined within the C&O Canal near Washington, DC, from the colonial period to the early-20th century. Allegheny Portage Railroad NHS in Pennsylvania transported barges over the mountains with steam hoists and mined coal to fuel the boilers. The iron furnace at Hopewell Furnace NHS near Philadelphia operated from 1771 to 1883. The New Jersey side of Delaware Water Gap NRA is home to the Pahaquarry Copper Mine.

Mining technology within the NPS spans the continent in both time and place. Some mining features are the main reason for a park's creation, and others are but a side story of the area's history. Among the tools and equipment in park collections are hand and mechanical rock drills, conveyor belts, and 300-ton capacity trucks. Mining continues to supply the raw material for our economy, and its technology awaits discovery by park visitors.

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